

REPORT OF THE STUDY GROUP ON INSAT TELEVISION UTILISATION FOR EDUCATION AND DEVELOPMENT



MINISTRY OF EDUCATION AND CULTURE
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PREFACE

The Sixth Plan commits us to a linear expansion of education reaching out to nearly 180,00,000 pupils in the age-group 6 to 14 on the one hand and to restructuring and reforming the learning system to make it relevant to our human and economic development on the other.

The Plan admits that the linear expansion cannot be achieved by the existing school system because even if the resources were available, which are not, schools cannot be built fast enough, teachers cannot be trained within the five-year time frame and school equipment and books produced and procured to meet the additional requirements of 180,00,000 pupils. The same constraints apply to a nation-wide reform of the school system, as opposed to pilot and demonstration efforts, particularly in the fast moving science and learning areas. It is here to meet the Sixth Plan's double imperative of linear expansion and educational restructuration and reform that it calls on the resources of educational technology using the two INSAT which will be sent up during the Sixth Plan as the means of meeting these seemingly impossible demands.

The availability of INSAT-I in 1982 led the Ministry of Education to set up a Study Group to prepare a software plan for INSAT TV utilisation for education and development.

In order that educational television should become relevant to the needs of the educational situation, the Ministry of Education took the decision that the production of educational television programmes will be the responsibility of the educational authority. It is heartening to note that this decision has been welcomed by the Ministry of Information and Broadcasting and the educational authorities in the country.

The Study Group had the task of preparing a Software Plan in the context of this decision.

I take this opportunity to acknowledge the contribution of the members of the Study Group and its sub-Groups, and the institutions which made its officers available for this challenging and onerous work.

On behalf of the Study Group, I would like to record our deep appreciation of the excellent work done by Km. S. Rahman, the Member-Secretary of the Study Group.

S. SATHYAM

Joint Secretary to the Government of India.

BACKGROUND

In July, 1979, Ministry of Education took steps to develop a plan of operation for the utilisation of television and other facilities that would become available with the launching of the first Indian satellite then expected in mid-1981. In view of the experience and involvement of the Space Applications Centre, Ahmedabad in different aspects of television, it was decided to elicit their cooperation in preparing a basic document for consideration and discussion. It was expected that the document would provide, among other things, an outline of the institutional, human, technical and financial resources available, and those that could be developed in the country, and were necessary for a national system of utilisation of television for education. In response to the Ministry's request, the Space Applications Centre prepared a background paper entitled *INSAT utilisation for education and development*. The paper provided a brief description of the INSAT capabilities, the ground segment requirements for TV, the possible hardware required for utilisation of the satellite for developmental communication, and an approach to developing a design for the purpose.

0.2 On January 30, 1980 a meeting was convened by the Ministry of Education to discuss the background paper and all connected issues involved in the development of a national plan of operation for the utilisation of radio and television facilities that would become available with the launching of the satellite. The meeting was held under the Chairmanship of Education Secretary and attended by representatives of the Space Applications Centre, Ministry of Information and Broadcasting, Doordarshan, All India Radio, Planning Commission, National Council of Educational Research & Training, Directorate of Adult Education, University Grants Commission and the Ministry of Education.

0.3 At the meeting, it was agreed that an all out effort should be made to take the fullest advantage of the radio and television facilities and for that purpose detailed plans should be prepared. To this end it was decided that urgent steps should be taken to involve all user Ministries in the preparation of a software plan for INSAT utilisation. The meeting for the purpose was to be convened by the Ministry of Education as the largest user Ministry or the Ministry of I&B as the nodal Ministry for Broadcasting. It was also decided that the Ministry of Education as an important user Ministry would have its own group for preparing plans for the educational component.

0.4 Immediately thereafter, on February 2, 1980, the Ministry of Information and Broadcasting set up a Working Group to draw up a detailed software plan for utilisation of INSAT through the medium of television. The Working Group consisted of representatives of all user Ministries (Agriculture, Education, Health and Rural Reconstruction), Planning Commission, Space Applications Centre, Doordarshan and Department of Electronics, under the Chairmanship of Secretary, Ministry of Information and Broadcasting. The Working Group was assisted by four Sub-Groups namely:

- (i) for identification of programmes, priorities, areas of application and a time-frame
- (ii) on manpower planning
- (iii) on training aspects; and
- (iv) on deployment of community TV sets.

The Report of the Working Group was completed in September, 1980.

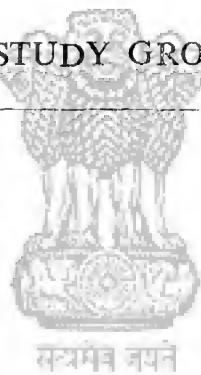
0.5 On the question of responsibility for producing programmes, the Working Group recommended that the concerned Ministries and their associated agencies should develop programme production capability and take upon themselves specific responsibility for producing programmes. After due consideration, the Ministry of Education took the decision that the educational authorities will take the responsibility for the production of programmes intended for their specific uses. The decision was conveyed to the Working Group.

0.6 The Ministry of Education also indicated to the Working Group that the major educational objective for satellite television would be to promote alternative approaches to education for children, youth and adults. The thrust of the specific programmes would be to emphasize direct teaching, moving away from curriculum-oriented approach and aim at reduction of load in the class room, and improve the quality of programmes through training of manpower.

0.7 In May, 1980, the Ministry of Education set up a Study Group to plan the educational component of INSAT television utilization keeping in view these two major decisions.



1. STUDY GROUP





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STUDY GROUP

The Study Group was set up under the chairmanship of Shri S. Sathyam, Joint Secretary, Bureau of School Education. The composition of the Group is given in Annexure I.

1.2 The terms of reference of the Study Group were:

- to define the role of television in education and its application in the priority areas;
- to prepare software plans for geographical areas and languages to be covered initially;
- to identify institutions which have potential for ETV production and their needs (equipment manpower, training etc.);
- to plan for utilisation of television in terms of training of teachers/instructors, provision of support materials, provision, custody and maintenance of sets;
- to determine the structure at the national and State levels and the mechanism for coordination;
- to work out the financial implications, specifically the contribution of the Centre and the States; and
- to prepare a software plan with reference to existing TV facilities and pretest the programmes on experimental basis in preparation for INSAT.

1.3 The Group held its first meeting on May 24, 1980. At its second meeting on June 4, 1980, the Group decided to set up sub-groups to examine specific areas in detail. Three sub-groups were set up for programming, hardware and manpower, and training. The composition of these sub-groups is given in Annexure II. The terms of reference for respective sub-groups are given in Annexure III. The meetings held by the Study Group and the sub-groups is at Annexure IV. The Study Group held its last meeting on February 27, 1981.

1.4 The Study Group had the privilege of specialist participation from a number of institutions as well as of individual experts in different areas. The institutions which cooperated with the Study Group and its three sub-groups were: NCERT, Doordarshan, Indian Institute of Mass Communication, Directorate of Adult Education, Central Board of Secondary Education, Films Division, Defence Scientific Information and Documentation Centre, Modern Institute of Photography, and Department of Sociology, Delhi University. Professionally, the participants were planners, administrators, educators, curriculum experts, engineers, producers, artists, writers, researchers, sociologists, professors and teachers. The Study Group gained from their wide ranging professional background, rich experience and keen interest. It was thus possible for the Study Group to fulfill most of its assigned functions. Briefly, the Study Group developed a policy for the use of television, identified approaches, priorities, target audiences and themes for programmes, considered in detail the implications arising out of the decision that the educational authority shall be responsible for the production of educational television programmes in terms of an infrastructure and manpower requirements, identified key areas for training and developed training courses in considerable detail and suggested lines for further action.

1.5 The Report of the Study Group follows. This is a synthesis of the reports of the three sub-groups which functioned within the framework of the decisions taken by the main group at its two preliminary meetings.



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2. FRAMEWORK FOR PROGRAMMES





FRAMEWORK FOR PROGRAMMES

INSAT

INSAT, the first Indian National Satellite, will be available in early 1982. It will bring about a tremendous expansion of broadcasting facilities, making it technically possible for radio and television communication to reach all parts of the country. It is imperative that these facilities should be used as an aid to economic and social development and benefit as large a population as possible, particularly in rural India. The programmes should be relevant, meaningful and effective so as to ensure the participation and involvement of the people in the task of development.

2.2 The television facilities are sought to be used for educational development as well, notably for widening access to education, for reducing existing disparities between different regions of the country as well as different sections of the population and for bringing about an overall improvement in the quality of education. It is hoped that television through commonly devised programmes can contribute to the creation of national integration, bring about awareness of problems of national significance and develop desirable attitudes and values among children & youth and the population at large.

2.3 Television is sought to be inducted into the educational system as a whole for the first time in the country. The small efforts made in the past, notably during SITE, have provided certain positive indications regarding the role and contribution of television in the developmental process. These have to be studied further.

2.4 Within the educational and socio-economic conditions obtaining in our country, television has the status of an independent variable requiring investigation and study in its own right. It had to be considered for instance, whether television has attracting and holding power for children in the rural situation or whether it can even significantly contribute to an overall improvement in the quality of education. In the absence of validated evidence such questions, can only invite subjective points of view. In the initial stage when audience and medium were both relatively unknown it would be desirable to keep an open mind on the possible interactions and influences of the medium.

2.5 Television should be considered as a new and persuasive medium of communication which was different from the methods and techniques presently in use for instructional purposes. It is possible that the nature of television (visual communication) can contribute to the objectives of education in more way than merely providing gain in knowledge.

2.6 The Study Group, therefore, agreed that the major objective of the utilization of TV in the experimental phase would be to test the feasibility of TV and its role in education. For this purpose research projects should be devised to test the effectiveness of structured educational programmes and the ways in which such materials should be produced to provide the most effective contribution to the educational system.

Approaches

2.7 The educational use of INSAT television should be developed within a national framework. To begin with a set of guidelines should be adopted at the national level to provide a common direction for development, without in any way restricting freedom of operation at the State or production levels. The following considerations should govern the development of the educational use of INSAT television.

2.8 The INSAT programme is intended for rural audiences in the less developed areas of the country. The primary target for its educational component consists of rural children. The focus should, therefore, be the rural child as an integral part of the society in which he lives. The programmes must relate to his social educational and emotional needs. This implies not only the choice of an appropriate language, images or themes but also the assumption that the total programme is relevant to the perceptual abilities, experiences and level of understanding of rural children.

2.9 The programme must primarily assist in the universalization of elementary education. Elementary education covers a very wide area which includes much else besides instruction in reading, writing and elementary numeracy. Indeed from the point of view of human development it may be argued that the primary function of elementary education should be the development of attitudes and social values which are in consonance with the needs of a modern secular democracy. And since the formal school system is generally concerned with the communication of skills in the 3 R's it is all the more necessary that the INSAT programme should perform the complementary functions to school instruction.

2.10 In keeping with this proposition the INSAT programme should aim to become an alternative system of education addressed directly to the children. It should gradually acquire an independent status, with programmes being made in relation to clearly specified educational goals. Even if, at a later stage, the programme is extended to include aspects related to the formal school curriculum, it is essential that this should be done in a manner independent of the teacher as an interpretative agent between the programme and the children. On the other hand, the teacher would be free to draw upon the contents of the programmes for instructional purposes though it would not be necessary for him to monitor the television viewing process. Over a period of time, children are likely to acquire significant viewing skills of their own. Also depending on the quality of the programmes, they are likely to accept television as an educational channel which is different from but complementary to the instructional processes they are familiar with. The capabilities of television as an effective medium of communication and for the communication of ideas and information in imaginative, creative and understandable way should be exploited to the fullest possible extent. Television should be freed from the constraints of the formal teaching system, its structure and content. It should develop as an independent and purposeful educational channel for young people, hopefully also to be of interest to adults. This is particularly desirable in view of the limited time and resources available for educational television programmes. In other words, the mass medium character of television as an agent of social change and awareness should gain precedence over its role as an instructional medium.

2.11 Programming should be derived from themes of national importance which are either not covered or covered inadequately by the school curriculum. Some such themes are national integration, health and nutrition, sanitation, preservation of the environment, energy conservation and population education. These themes should be treated with the overall aim of widening the horizons of children, enriching their experiences bringing about an understanding of the society and the world in which they live, and fostering the right attitudes and values.

2.12 In the selection of specific areas for programming the effort should be to choose those which can lend themselves to visual presentation, those which are otherwise difficult to put across in an interesting or adequate way, or are of demonstrative value such as development of skills or the teaching of processes. Again, the effort would not be to cover a particular topic or subject exhaustively (say in a series of programmes) as that would involve the necessity for contextual relevance but to present the topic in a manner in which it would appeal to and interest children of different age-groups. The specific purpose of the programme should contribute to the furtherance of the larger educational objectives.

2.13 Programming should be consciously experimental and should aim at developing different kinds of programmes. They could be intended for children in school and children out of school. They could also at this initial exploratory stage, be made for strictly instructional purposes requiring the assistance of a teacher or intermediary, and those which could be addressed directly to children.

2.14 A deliberate attempt should be made to identify topics for television programming which cut across age and class considerations and would be useful for both children in school and out of school.

2.15 Programmes should above all the entertaining and interesting and seek to hold the continued interest of children. They should develop among children self-reliance, ability to explore, to do, to experiment and to discover.

2.16 The above points are largely made in keeping with the needs of children and it is evident that they are based on differing emphasis on the role of the INSAT programmes. There is however another aspect of these programmes which centres round what, if anything, can be done for the teachers themselves. One possibility is to provide an interpretative over-view of the programmes which are essentially meant for children. This approach would necessarily involve some degree of linkage between the INSAT programmes and curricular interests of the teachers. Another approach requires a recognition of the needs of teachers per se quite apart from their relationship with the children. The teachers are themselves a product of an emaciated educational system which tends to a trophy their imaginative sensibilities and linguistic abilities. An independent approach may seek to make the teacher more appreciative of national and international horizons and thus provide him with a wider vision beyond his parochially bound life. A good teacher must necessarily be better informed, both socially and technically in the strict curricular sense. This could be a worthy aim for television in the service of teacher education.

2.17 Keeping in view the large requirements of teacher education the mass media should be used to train teachers to provide straight forward help in formal school teaching. Television could be used in conjunction with radio for this purpose.

2.18 Furthermore in planning for television in INSAT, a clear demarcation should be made between radio and television. Radio has a much wider coverage and is a comparatively less expensive medium. Its use should be optimized. The use of television should be complementary to that of radio and directed towards purposes which cannot be achieved by radio. The plan for radio and television utilization should therefore be an integrated one to the extent possible. The Ministry of Education should set up a Working Group for radio utilization to consider this aspect in detail.

Age Group

2.19 Elementary education covers the age group 5-15 years comprising children in school and children out-of-school. The Group discussed in detail the question of age group or age groups for which the television programmes should be made.

2.20 In view of the new approaches to programming visualised under the INSAT it was felt that the programmes should be made for the target group as a whole. In the initial experimental stage however, programmes for children in school could be made for two separate age groups viz 5-8 and 9-11 years. For programmes meant for out-of-school children the age group to be kept in view may be 12-15 years.

2.21 Then again, the programmes for these age groups would be of two kinds:

- those that necessitate the help of a teacher or an intermediary and
- those that would not need such assistance as the messages would be intended for direct assimilation by the target groups.

2.22 The major educational objective for satellite television was to promote alternative approaches to education. The thrust of the specific programmes was to gradually move away from the curriculum oriented approach which normally requires a teacher, to programmes that could be understood directly, thus resulting in reduction of load in classroom. In the initial experimental phase, 25% of the programmes may aim at direct teaching which would gradually increase resulting in the evolution of an alternative learning system.

2.23 The matrix for programming in the initial experimental stage may be as follows:

Target group	Location	Programmes		Timing
5-8 years	. . . in school	with teacher	without intermediary	Morning
9-11 years	. . . in school	with teacher	do.	Morning
12-15 years	. . . out of school	with teacher	do.	Afternoon

Time and Duration

2.24 It was noted that one hour time would be available for the morning broadcast. A programme is normally of 20 minutes duration because of the limitation of the cassette. Sometime would be required for change over from one group to another. It would, therefore, not be possible to accommodate more than 2 programmes within one hour. Rather we may need only 45 minutes for this. But, if it is possible to get 70 minutes broadcast time, three programmes can be shown.

2.25 Since, however, it will take some time for production to pick up, we may plan to utilization of 45 minutes telecast. The possibility of utilising the rest of the time for radio broadcasting may be explored.

2.26 Programmes for non-formal education for children out-of-school would be telecast in the afternoon at an appropriate time. These programmes would be initiated depending on the production capacity and availability of afternoon time.

Programming Themes and Content

2.27 The curricular and non-curricular framework for elementary education offers a wide area for the choice of themes for television programmes. However, in order to derive the maximum benefit from what at the initial stage may be confined to an input of about 150 programmes annually, it is desirable that we should adopt a selective approach in the choice of programming themes. The choice should also be linked to the guidelines contained in the section on Approaches, notably the lessening of the load in the classroom, the widening of the horizons of the child and ensuring commonality of interest.

2.28 It was agreed that themes of national importance would be covered by television partly because these themes had not been included in the educational system so far in a systematic manner and partly because they were of general interest. Some of these themes have been identified in para 2.11.

2.29 It was considered that the main thrust of the programme, to widen and enrich the child's horizons could best be achieved through bringing about in him an awareness of the country as it is today, with

emphasis on development and change taking place and also by making him understand the history and culture of the country at large and of his own immediate environment. Therefore, history and culture and modern India should also be included among the identified themes.

2.30 In view of its demonstrative quality, television should also be used for imparting or developing different kinds of instructional skills relevant to the children in the rural situation.

2.31 Themes cover very wide areas and could be approached from several points of view. In order to provide focus and ensure commonality of approach in programming, the Group considered that detailed work on laying down the objectives of specific themes suggesting topics for programmes under each theme, developing an outline of content in relation to target groups etc. should be done.

2.32 Some additional attributes for programmes were suggested. Programmes should :

- (i) motivate children towards learning and attending school or instructional centres
- (ii) develop desirable attitudes and habits
- (iii) create awareness of the problems of the community
- (iv) contribute to the improvement of skills
- (v) lead children to explore and to do
- (vi) create awareness of the immediate and surrounding environment
- (vii) create awareness of the prevailing evils of society and efforts being made to eradicate them.

2.33 Keeping in view the variation in language within a State, it was felt that the programmes should be so effective that there would be the minimum possible dependence on language. Certain programmes may indeed, not require the use of spoken words at all. The programmes should be designed to appeal directly to the child thereby minimising the role of teacher or intermediary for interpreting TV programmes.

2.34 To illustrate the kind of work that needed to be done, the members of the Group worked on a few themes and topics. These examples are at Annexure V. However a considerable amount of rethinking and refinement and further work has to be done to develop objectives and guidelines which would truly reflect the approaches suggested for television programming. In doing so, it is important to recognize the special character of television and to set aside the kind of approaches and categorisations that necessarily condition the organisation and preparation of textbooks. Television is direct and versatile in its appeal and communicability. Visual images cannot also be graded in the precise way a text can be. The educationists must begin to appreciate the difference between textual language and the language of television, or for that matter between a textbook lesson and a radio broadcast.

2.35 A National Workshop should be organised for further work in this direction to be followed by workshops at state and institutional levels. This will ensure that a common concern and understanding permeates all efforts for programme development.

Programming for Teachers

2.36 Teachers programmes may be made for the following broad purposes :

- (i) to broaden the horizons of the teachers
- (ii) to provide straight forward help in formal school teaching
- (iii) to assist in appreciation of the objectives of the educational uses of television under INSAT for their better utilization.

2.37 Under (i) a wide variety of programmes would be produced to provide enrichment, entertainment and general education to the teachers. They will aim at improving the informational and educational level of the teachers, updating their knowledge, putting across innovations in educational methodology, in short anything that is of interest or relevance to their professional interests. These programmes will be a means of continuous communication with the teachers with the ultimate objective of minimising the need for re-training if not doing away with it altogether. Some of the programmes could be supported by printed material and/or radio programmes. These programmes could also be of interest to the local educational community and arrangements may be made for their viewing them.

2.38 Under (ii) areas for teacher training would be identified and intensive training programmes developed. The multi-media package for science education, for instance, could be further refined and made more relevant to the needs of targetted audiences. Training packages or series of television programmes could be made in other areas as well.

2.39 Under (iii) a weekly programme could be made to review programmes telecast in the previous week and those to be telecast in the next week. These programmes would be of an interpretative nature. In addition programmes could be made on how to use TV.

2.40 The multi-media package technique had been tried out during SITE for training teachers in science teaching. In two applications of the package about 48,000 teachers in six States were trained and this spectacular impact has rightly created interest in the technique. However, the NCERT's experience underlines the great effort and expense involved in the entire process of preparation, application and subsequent evaluation of such a package.

2.41 The utilization of the package has not been as extensive as it could have been partly because the technique does not seem to have been accepted by the States as a feasible training technique and partly because the package may not be entirely relevant to the level of teachers and conditions obtaining in the different states. The package already prepared will therefore need to be considered further for promoting greater utilisation and also for making it more relevant through modification to the varying needs of the States.

Film Use

2.42 In the initial stage it would be necessary to use films to supplement the television programmes as it would take time for the production centres to start working in their full capacity. For this purpose the work of identifying suitable films would have to be taken up and an agency or agencies specified. The Group was informed that the Centre for Educational Technology is viewing films for selecting excerpts for use in production of television programmes. This effort may be utilized by the Production Centres.

2.43 However it is felt that the work of viewing and selecting films will need to be expanded urgently and made on a broad-based basis. Information about new films made in India and elsewhere would be required and contacts established for obtaining such information and materials on a regular basis.

2.44 The Cultural Exchange programmes may be used for sending out persons for viewing and selecting on the spot audio-visual material suitable for the INSAT programme. Negotiations could be made simultaneously for obtaining permission to use them. A beginning may be made with the socialist countries which have a long history of producing good childrens materials.

Support Material

2.45 Even though the major objective of the television programme was to move away from the class room situation, it was recognized that there was need for certain kinds of support materials to re-affirm points in television programmes. However taking into consideration the cost and other constraints in production and distribution of printed materials, they should be made on a selective basis and their utilization fully ensured.

2.46 The materials should preferably be prepared for children. They should be illustrated and activity based. These materials, prepared on an experimental basis, could also be used by teachers.

2.47 Support materials may be prepared for teachers for programmes intended specially for them. For this purpose, existing channels like educational journals & local newspapers should be used. *The Primary Teacher*, the NCERT journal could also be used for disseminating information and materials to reinforce teacher training programmes and to assist teachers in their daily work.

2.48 Support material, whether for teachers, supervisors or children, should be carefully designed produced. It should be usable and attractive in form.

2.49 Television itself may be used for broadcasting information about the schedules of television programmes, thus doing away with the need for printed material of this kind.

Research and Evaluation

2.50 Research and evaluation should be an integral part of the production system to provide the basis for planning programmes and for improving them.

2.51 For improving programmes quick, simple and effective feedback methods and systems should be developed . Activity based support material for children could also be a useful feed back channel.

2.52 All members of the production team should be provided some orientation about evaluation.

2.53 The producer and his team should know their audience. For this purpose the team should preferably study the area first hand. Where audience profiles are prepared they should be specific and relevant to the requirements of the producer. It would be more useful for a TV producer to have his basic material on audio and video tapes, films and photographs rather than in printed form.

2.54 A major area of investigation is the characteristics of new audiences, their needs and interests.

TV School

2.55 The idea to set up a TV school as an alternate system of education at higher primary level (Class VI to VIII) needs examination.



3. PRODUCTION INFRASTRUCTURE





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PRODUCTION INFRASTRUCTURE

Since the responsibility for the production of educational programmes will rest with the educational authorities an appropriate production infrastructure will need to be created in the States. At the same time, the role of existing educational institutions will need to be amplified to enable them to meet the requirements of the altered situation.

3.2 Production facilities should be located at State capitals in institutions which have sufficient autonomy and operational freedom to handle programmes for different sectors of education. It was not visualised that production facilities would be duplicated in the near future to meet requirements of other sectors of education such as adult education, secondary education, women's education etc.

3.3 Film would continue to be an important input for educational programmes. Educational programmes require special inputs for putting across concepts and ideas which need film support.

3.4 Production centres should be established in State Institutes of Educational Technology which were recommended by the Ministry of Education's Working Group on Educational Technology. The State Institutes of Educational Technology should be set up by State Education Departments as distinct institutes outside existing formal structures because none of the existing institutions was equipped to take on educational technology functions. The State Institute of Educational Technology would have functional autonomy to enable it to attract talent and to have freedom in programmes operations.*

3.5 The existing facilities in centres such as audio-visual units, educational technology cells, publication and information units should be brought together under the State Institute of Educational Technology to optimize their functioning for common programmes.

3.6 The Group has drawn up an outline of a television production centre for educational purposes. It has recommended the setting up of 10 such centres, to begin with. It has also recommended one film processing and sound transfer unit at a central place.

Rationale for Proposals

3.7 The Group was guided by two important considerations. One is that financial resources are limited, that there must be optimum utilisation of the investment and that plans should be realistic in terms of financial outlay. The other is the firm conviction that it would be a false and misconceived sense of economy to settle for an inadequate and ill equipped production centre, since such a set up would ultimately prove counter productive and defeat the very purpose for which the centre has been set up.

3.8 We are not now in a situation where we can indulge in experimental measures. We are in a situation where we have to bring into existence centres that will actually produce day after day, week after week, and month after month, for many years to come, programmes of acceptable professional quality and educational utility. Therefore, the Group considered that its recommendations should be such that the basic minimum requirements in terms of equipment and facilities are provided at the proposed centres and they do not suffer from serious handicaps and constraints in the hardware area.

3.9 Again, the group gave careful thought to proposals that have been made elsewhere that educational programmes can be produced with an inexpensive studio set-up and extensive use of portable video equipment. The Group was not able to accept the validity of this claim. Such an approach is bound to seriously inhibit and constrict the style of production to be adopted by the centres. While this may not be a serious handicap in producing programmes intended for general or development communication, it would render impossible the production of certain types of programmes that are indispensable for educational television.

3.10 In order to make entertaining and instructional programmes for young children, their active participation inside a studio will be essential. Adequate studio space and facilities for participatory programmes like group singing, group dancing and plays have been provided. Such a set-up will enable producers to visualise and mount educational programmes involving students, teachers, educationists and experts and to establish a better rapport between the teachers and the taught. It would also be possible to organise and televise science activity programmes and those involving the use of science laboratory, exhibitions, models, puppets and graphics etc.

*See Report of the Working Group on Educational Technology, Ministry of Education and Social Welfare, Government of India, New Delhi, 1978.

3.11 A reasonably well-equipped studio with the minimum technical facilities is thus essential for an on-going and continuous production programme of the nature visualised by the Group. There would, of course, be increasing utilisation of portable video equipment in areas where it can be effectively used. At the same time, programmes that need to be produced inside a studio under controlled conditions will also be produced in adequate numbers.

3.12 Realising that techniques like slow motion and fast motion photography and animation are sometimes the only means of explaining certain scientific processes and abstract ideas, the Group has provided in each centre a minimum of motion picture filming and editing facilities. Each centre has also been provided with dark room facilities, graphic equipment and facilities for low cost animation work.

3.13 Film processing and sound transfer facilities have not been provided at each centre. The amount of film that will need to be processed daily during the initial stages is likely to be small so that it would not be viable to provide each centre with separate film processing facilities. Though the capital investment is not much, there were operational and personnel problems. It has, therefore, been recommended that the film processing and sound transfer facilities for 16 mm film would be provided at a central place and that the individual State centres will not have these facilities initially. Since these facilities are also commercially available, it is felt that the centres may make use of them to the extent possible.

TV Production Centre

3.14 The TV production centres proposed to be set up for educational television programmes will be responsible for the production and capsuling of programmes which will be transmitted by Doordarshan.

3.15 Each production centre will comprise a television studio and associated production ancillary areas. The main production areas will be as follows:

TV Studio

Video Production Room

Audio Production Room

Camera Control Unit

Studio Lighting Control Unit

Video Tape Recording Room

Video Preview and Editing Room



3.16 Keeping in view the special requirements of educational programmes by way of quality and variety a TV studio of moderate size has been provided. This studio will enable the production of TV programmes under controlled conditions and with the participation of children. Studio facilities will be complemented with field based facilities using 16mm film and EFP (Electronic Field Production) equipment.

3.17 One of the vital inputs of educational production is the 16mm film. This medium provides the possibility of using animation, slow and fast motion and many special visual effects. The creativity of a producer would be seriously jeopardised if facilities around at least one 16mm film camera are not provided.

3.18 A graphic unit has been included to provide essential inputs such as captions, slides, still photographs, diagrams, maps etc.

3.19 The costliest single item in the list is the Telecine Chain with Multiplexer. The Group discussed whether it was essential for each centre to have this facility or whether it could be provided in regional centres only. The view was that this is a vital and indispensable facility in educational programme production. Inputs like slides and films have to be constantly used; also very often the use of inserts of certain sections of films which are borrowed from other sources and cannot therefore be mutilated during use, becomes unavoidable. Hence it is recommended that this facility should be available in each centre. The cost of the equipment that is locally manufactured is Rs. 25 lakhs approximately. If imported, it will cost Rs. 15 lakhs including customs duty. In such a case there will be a saving of Rs. 10 lakhs per centre or Rs. 1 crore in all. The Group felt that this matter should be brought to the attention of the appropriate authorities.

3.20 The equipment identified for one production centre is at Annexure VI.

3.21 The cost of the equipment including the installation is approximately Rs. 114.7 lakhs per centre. The imported items of equipment cost about Rs. 50.00 lakhs which includes about Rs. 30 lakhs as customs duty.

3.22 The cost of equipment for 10 centres will thus be Rs. 11.47 crores.

Film Processing and Sound Transfer Unit

3.23 Equipped with a film processing plant, 16mm film printer complete with accessories and sound transfer equipment, the Unit will process and print films shot at the different production centres and do the necessary sound transfers.

3.24 It will also make available prints of films to educational institutions which have only film projection facilities, thus extending the advantage to institutions outside the television broadcasting range.

3.25 The list of equipment for the proposed Unit is at Annexure VII.

3.26 The cost of the equipment is Rs. 20.00 lakhs approx. The imported items of equipment cost about Rs. 18.00 lakhs. This cost is inclusive of customs duty amounting to Rs. 11.00 lakhs approx.

3.27 The production cost is estimated at Rs. 15.00 lakhs for a five year period.

Building

3.28 The production centre is envisaged as a part of the total complex of the State Institute of Educational Technology recommended by the Ministry of Education's Working Group on Educational Technology.

3.29 The building that is visualised will have about 1020 sq. metres of constructed area comprising TV studio floor space (120 sq. metres), technical work area (450 sq. metres), staff accommodation area (250 sq. metres), and corridors and foyers (200 sq. metres). The land area required will be approximately four acres or 2160 sq. metres. A suggested plan is at Annexure VIII.

3.30 The cost of the building is estimated at Rs. 24.40 lakhs. This includes civil works, airconditioning ducts, acoustic treatment of the studio etc. The total cost of 10 buildings for the proposed 10 centres will be Rs. 2.44 crores approximately (Item U and V of Annexure VI).

Location of Production Centres

3.31 The question of the location of the ten production centres was discussed. It was noted that the Working Group of the Ministry of Information and Broadcasting had identified for coverage by satellite and terrestrial television modes, nine States in addition to the North Eastern Region and two island communities. The nine States were : Orissa, Andhra Pradesh, Karnataka, Maharashtra, Bihar, Rajasthan, Uttar Pradesh, Gujarat and Madhya Pradesh. It also noted that in the first phase the Working Group had selected four States for coverage by the satellite. These States were Gujarat, Andhra Pradesh, Orissa and Bihar, the former three because of available television infrastructure and the latter because of its predominantly tribal character. All the four areas, of course, fulfil the condition of comparative backwardness, an important criterion for the selection of States, and are to be covered by television.

3.32 The Group decided that it would go along with the decisions made by the Working Group of the Ministry of Information and Broadcasting and therefore recommended the location of the first four production centres in the States selected by the Working Group of the Ministry of I & B. In addition, all these states have Educational Technology Cells. The production centres would be located at Hyderabad, Ahmedabad, Bhubaneswar and Patna.

3.33 Keeping in view the need to give priority to the needs of the North Eastern Region, the Group proposed that two production centres should be set up by 1985 at Kohima and Gauhati. This is also in consonance with the plans of the Ministry of Information & Broadcasting. As regards the remaining four of the ten centres, the location would be decided keeping in view the plans of the Ministry of Information & Broadcasting and the response of the State Governments to the proposal to take on production responsibility for educational television.

Phasing and Time Frame

3.34 A phased implementation of the programme is necessary keeping in view the physical targets likely to be reached in the setting up of production centres, manpower recruitment and training. Assuming that all formalities of approvals, sanctions and budgetary provisions are available by December 1, 1980 and assuming that the Directorate of Educational Television and the Cell in the Ministry of Education will be in position not later than 1 January 1981, a tentative schedule will have to be drawn up taking into account the necessary procedural formalities and lead time required for different activities.

3.35 Generally it takes not less than 18 to 24 months for procurement of equipment in the best of circumstances. Similarly it takes about 24 to 30 months for new construction of a building or about 18 months for modifications to be carried out in an existing building. Once the building and equipment are all available, it may take 6 to 8 months for installation and testing of equipment.

3.36 Taking all these factors into account, it may reasonably be hoped to bring up two to three production centres by the middle of 1983 and then onwards two more production centres every six months thereafter. This is because the delivery of the equipment, particularly the imported ones will be staggered and the various centres will have to be commissioned in a phased manner depending on the availability of the expert engineers and technicians to instal, test and make operational the equipment. Even to achieve this modest target, the implementation may have to be taken up on war footing, procedural formalities simplified and recruitment of personnel both for installation and operation expedited.

3.37 A detailed phasing has to be worked out after formal approval of the scheme is accorded and PERT charts drawn up to keep a watch on the progress of the scheme.

Facilities in Existing Institutions

3.38 The group took note of a list of institutions, universities etc. with video, film and other production equipment prepared by the NCERT (Annexure IX). The equipment available with these institutions was carefully considered. It was also considered that some of these institutions could be visited by some members of the group to obtain first hand information about their potential to contribute towards this programme. Because of certain constraints the actual visits could not take place. However, some members of the Group had knowledge of the facilities available in most of these institutions. After discussion it was felt that these institutions could not be expected to undertake production responsibilities of the type visualized. From the technical point of view alone there would be the question of compatibility of equipment because Doordarshan has already opted for 3/4" video cassettes and the institutions listed do not appear to have this gauge of equipment.

3.39 The Group nevertheless felt that the cooperation of all these institutions should be sought and their contributions made use of in the programme. For this purpose, all material on software planning and conceptualisation of the programme should be freely made available to these institutions with the request that they should decide on the nature and extent of their participation in accordance with the requirements of the programme.

3.40 Special efforts should be made to similarly involve the State ET Cells to undertake all preliminary work in connection with the planning and preparation of programmes.

3.41 The activities of the Centre for Educational Technology and the Department of Teaching Aids in the NCERT should be directed towards preparation for INSAT e.g. training in different areas, production of prototype programmes, evaluation etc. Their resources need to be augmented immediately.

4. MANPOWER FOR PRODUCTION CENTRE





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MANPOWER FOR PRODUCTION CENTRE

The manpower requirements for the production centre have been identified under the following heads :

- (i) Engineering and auxiliary staff for TV studio
- (ii) Maintenance staff
- (iii) Production staff

The list is at Annexure X

4.2 The costs on account of the manpower support has been included in the total costs. Production norm of Rs. 10,000 per programme hour has been used for calculating production costs.





**5. DIRECTORATE OF EDUCATIONAL TELEVISION AND
PLANNING AND MONITORING CELL**





DIRECTORATE OF EDUCATIONAL TELEVISION AND PLANNING AND MONITORING CELL

In the context of INSAT programme, the responsibilities of the Ministry of Education will vastly increase both qualitatively and quantitatively.

5.2 On the software side, the work will involve conceptualisation, planning and execution in liaison with the State Governments, of a daily programme-output of about 40 minutes duration per centre.

5.3 On the hardware side, ten television production centres will have to be planned, installed, tested and commissioned after the equipments have been procured, indigenously and by import. Arrangements for the maintenance of these production centres will have to be made. The installation of these centres will also involve civil works which may be contracted out but will need to be supervised.

5.4 A suitable infrastructure will be required for research and evaluation which will have to be centrally organised.

5.5 Additionally, work related to budgeting, policy formulation, coordination and control will also have to be handled as a part of this project.

5.6 These enormous responsibilities can be, shouldered only by a full fledged Directorate of Educational Television, which will function as a technical wing working outside the Ministry, possibly as an attached or subordinate office. This technical wing will consist of experts and administrators from various disciplines like education, administration, engineering, programme production, research and evaluation. Also, the Ministry of Education will have a Planning and Monitoring Cell which would be responsible for the policy formulation and implementation of the programme.

5.7 It would be relevant to mention that this will be an on-going programme. After INSAT-I presently scheduled to be in space in January, 1982 there will be INSAT-II and INSAT-III. The infrastructure will also be useful for taking advantage of the terrestrial expansion of television which is going a pace.

5.8 An expenditure of about Rs. 68.2 lakhs has been estimated for a five year period for this infrastructure as follows :

1980—81	.	.	.	.	.	4.2 lakhs
1981—82	.	.	.	.	.	16.0 lakhs
1982—83	.	.	.	.	.	16.0 lakhs
1983—84	.	.	.	.	.	16.0 lakhs
1984—85	.	.	.	.	.	16.0 lakhs
<hr/>						
<hr/>						TOTAL . . . 68.2 lakhs

5.9 Since the satellite will be operative by about March 1982, it is essential that the Cell in the Ministry and the Directorate of Educational Television should be set up with the utmost expedition.



6. COSTS





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COSTS

The total cost of one production centre including building, hardware, installation, manpower and production costs is Rs. 159 lakhs approximately. The cost for ten centres will thus be Rs. 1590 lakhs or Rs. 15.9 crores.

6.2 The cost of one Film Processing and Sound Transfer Unit is about Rs. 35 lakhs. The expenditure on the Directorate of Educational Television and the Planning and monitoring Cell in the Ministry of Education is estimated at Rs. 68.20 lakhs for the Plan period.

6.3 The total budget requirement for the Sixth Plan period (1980-85) is Rs. 18.11 crores approximately (Annexure XI).

6.4 This should be considered a very modest investment in terms of our target that each centre should produce daily two 20-minute programme capsules for an average of 200 days a year.





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7. TRAINING





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TRAINING

Educational television is a new area for which training courses are not readily available. The task was not only to identify areas of training and devise their contents, but also to develop approaches to training which would be relevant within the context of a developing society, more so within the framework of the philosophy of INSAT. As a result of the detailed discussions a number of important considerations and recommendations emerged.

Some Considerations

7.2 Training programme deserves the highest importance. While training in any area is important it is particularly so in the case of educational television which is a complex process involving team work consisting of persons with different skills and abilities. Also, since this is a new area where expertise and regular training facilities are not readily available, the planning for training and its conduct require urgent and careful attention.

7.3 All persons involved in different areas of production, evaluation and utilisation should have an understanding of the developmental objectives of the INSAT programme and its programme philosophy. It is, therefore, necessary that all trainees for different areas should be exposed to a common course aimed at providing general orientation on educational television and its place in development. The contents of such a course would include the concept and perspective of development, basic technology of television and concept and role of education.

7.4 Though we have a number of persons who have basic skills in graphics and preparation of visual aids they are not, by and large, oriented for use in television since television is a new area. Precisely for this reason institutions providing training facilities in these areas have not yet modified their curricula to the requirements of television. As a result, persons possessing skills in these different fields are presently working in their own narrow spheres of specialisation and have not been exposed to the inter-relationship and inter-dependence of these skills in the television production process. They are also not aware of the potential of their skills for communication through TV programmes. There is thus a need for developing new approaches to training in different areas which have a relevance for television.

7.5 It is generally accepted that a practical base is desirable and improves the quality of training. However, in the case of training for educational television the practical training is absolutely indispensable without which the training almost loses its meaning. The availability of hardware facilities is thus an important factor for all training programmes. In particular, for courses in ETV scriptwriting and ETV production the number of trainees that can be admitted is strictly dependent on the hardware and manpower facilities available at the training centres. Training centres should therefore be properly equipped in relation to the numbers to be trained and the pace at which training is required.

7.6 Proper selection of personnel for training in different areas is particularly important, since training facilities are scarce. Care must be taken to avoid wastage of limited resources and to ensure their optimum use for rapidly building up the programme.

7.7 It is equally important to test the aptitude of the trainees. In the area of locating writers for television and film, two methods have evolved. The Centre for Educational Technology organises two week orientation-cum-selection work shops where potential trainees are exposed to the methods and techniques of television and called upon to write scripts for television. On the basis of this exposure and the work done by the trainees a final selection is made. On the other hand the Films Division and Doordarshan invite samples of scripts from intending candidates and examine them for expression, imagination and ability to write. In other fields the skill and experience in specific areas should form the basis of selection.

7.8 Since younger persons have greater resilience, the age of the trainees should preferably be below 35 years.

7.9 A coordinated approach in training is desirable. While skilled personnel in different specific areas are required, it is necessary that personnel in each specific area also have some knowledge of and exposure to other areas in order to develop a coordinated approach. Also, training in some areas will serve as a base for training in other areas. For example, trainees in ETV production should preferably be drawn from those already trained in ETV scriptwriting.

7.10 Evaluation must be an essential element of all training courses as the effectiveness, relevance and improvement of programmes will depend upon the ability of the personnel involved to obtain feedback on their specific contribution. Therefore new approaches to evaluation and workable methods will have to be developed.

7.11 The requirement of training in different skills and for the large numbers needed is not likely to be available immediately in existing institutions. Approach to training should therefore be collaborative so that excellence available in different institutions can be pooled. The training programmes will therefore require careful planning and management. It would be desirable to record lectures, demonstrations and

experimental efforts for subsequent used and wide-scale dissemination. Such a collaborative and managerial approach should make it possible to increase the intake in certain programmes.

Training Areas and Courses

7.12 The need for training different types of personnel involved in the production of educational television programmes was appreciated. However the course content was worked out in detail only in the following priority areas :

1. General Orientation
2. ETV Script Writing
3. Visual Inputs for ETV
4. ETV Production
5. ETV Presentation
6. Utilisation of ETV Programmes

The contents of these courses are at Annexure XII.

7.13 Training material for different aspects of ETV is not readily available. The few institutions that are imparting training are in the process of evolving course materials which need to be modified in the light of experience. The course materials which have been prepared may be developed in detail in workshops into proper training manuals.

7.14 In view of the fact that resources are limited and a large number of personnel need to be trained in different areas within a short period of time, it is necessary to plan the courses carefully. As stated earlier, the lectures, demonstrations and experimental efforts could be recorded for subsequent modification if necessary and for wider use.

7.15 Training in the operation of hardware e.g. Camera, Audio-mixer, vision-mixer etc. is at present not available in many institutions. Specific courses in the maintenance of such equipment also do not exist. The IITs, Polytechnics etc. should examine the possibility of modifying existing courses to meet the requirements of ETV or consider the introduction of new courses specifically for ETV.

Institutional Support

7.16 A large number of educational institutions will have to involve themselves in organising training programmes of different kinds if the educational technology programme is to take root in the educational system of the country. The Group noted that the Report of the Ministry of Education's Working Group on Educational Technology had identified specific roles for a number of institutions, including universities. The Group endorses those recommendations.

7.17 Some specific programmes were further suggested for the following institutions :—

(i) Teacher Training Institutions

All teacher training institutions in the country may take cognizance of the decisions taken in the context of the INSAT programme with a view to making appropriate adjustments in their in-service and pre-service training programmes. The Report of the study Group should be made available as a basic document for the purpose.

(ii) Art Colleges

The Art colleges may include in their graphic art courses, the requirements of communication through TV. The possibility of short orientation courses may also be considered for personnel already engaged in these areas in state educational institutions.

(iii) Polytechnics, Indian Institutes of Technology

These institutions may examine the possibility of introducing courses relating to maintenance and repair of equipment required for ETV production and reception.

(iv) Technical Teacher Training Institutes

It was noted that some TTTIs are already providing training in scriptwriting and other TTTIs may wish to develop this capability as well.

(v) Institutes of Mass Communication and Research, University Departments of Sociology and Education

These institutions may consider undertaking research in the impact of educational technology programmes in general and INSAT in particular. They may train students in developing appropriate methodology for such work.

(vi) Universities

Universities may be urged to establish mass communication centres and also undertake experimentation in the production and use of television for development.

7.18 So far as the electronic engineering aspect of hardware is concerned the training courses provided by IITs and Polytechnics were adequate. However, for training in the operation of production equipment additional facilities will have to be created in institutions like the FTII, Pune; IFT, Madras and SJ Polytechnic, Bangalore.

8. FURTHER ACTION





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FURTHER ACTION

For the implementation of the INSAT programme efforts will have to be made on several fronts at national and State levels. To coordinate and monitor the implementation of the programme the Planning and Monitoring Cell should be set up immediately.

8.2 For all work connected with the establishment of the production centres e.g. procurement of equipment, overseeing construction, modification of buildings, installation of equipment, the Directorate of Educational Television should be set up immediately.

8.3 The NCERT should be galvanised for work assigned to it especially in training and production.

8.4 The production centres should be set up/strengthened at the earliest possible. The States should identify the site, prepare building plans, identify personnel for the centre and arrange for their training.

8.5 The primary responsibility for programming will be of the educational authority. But it may enlist a cross sectional participation in programming through a system of contract in addition to its own production.

8.6 All available production resources should be mobilised in a national effort. An advertisement could be issued to obtain information about and attract organisations who would be willing to assist in the implementation of the INSAT programme in accordance with requirements.

8.7 A National Workshop should be organised to determine programme focii thrusts under identified themes. The results of this Workshop should be widely disseminated and the National Workshop should be followed by State level Workshops so as to place the work of development of guidelines within a nationally agreed framework on a continuing basis. Training for script writers should be based on the material evolved out of these Workshops.

8.8 Workshops should be organised to develop further the course content in identified areas in the form of training manuals.

8.9 An agency/agencies should be specified for identifying and obtaining suitable films and audio-visual material for use in the INSAT programmes. These materials could either be obtained from within India or procured under Cultural Exchange Programmes.

8.10 The Report should be widely disseminated among media and educational personnel. Their comments and reactions should be obtained and discussed at national seminars. The recommendations of these seminars should be incorporated in the Report.

ACKNOWLEDGEMENTS

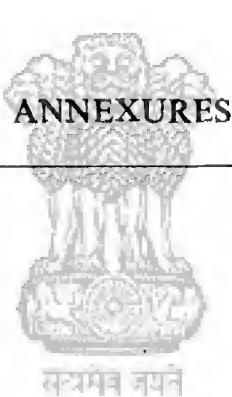
The Study Group is grateful to the various institutions and organisations who deputed their officers to serve on the expert groups on Programming, Hardware and Manpower and Training.

In particular it acknowledges the contribution of the Chairmen of the expert groups Shri P. V. Krishnamoorthy and Prof. C. Srinivasan and of Dr. T.N. Dhar who was alternate chairman of the Programming Group.

The Study Group would like to thank all participants for their cooperation and contribution in fulfilling its task.



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ANNEXURE I

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ANNEXURE III

Terms of Reference of Sub-Groups

Programming

- to define the role of television in education and its application in the priority areas
- to identify themes and topics for instructional programming
- to suggest the type of support materials needed for programmes and their evaluation
- to prepare software plans for geographical areas and languages to be covered initially
- to identify the core staff necessary on the software side

Hardware and Manpower

- to provide a blue print of a low cost studio keeping in view the limitations of financial and manpower resources.
- to identify institutions which could be involved in immediate programme production and suggest additional requirements for a low cost studio
- to consider any other matter relevant to its broad purposes

Training

- to identify the training requirements of all personnel involved in the production process and suggest ways and means of meeting these requirements
- to identify institutions where such training courses are already available and examine their suitability and suggest modifications where necessary
- to prepare suitable training syllabi in different areas of need.



ANNEXURE IV

Meetings

Study Group

1. May 24, 1980
2. June 4, 1980
3. February 27, 1981

Sub-Group on Programming

1. August 4, 1980
2. September 6, 1980
3. October 13, 1980
4. November 4, 1980
5. February 6, 1981

Sub-Group on Hardware and Manpower

1. July 7, 1980
2. July 30, 1980
3. August 1, 1980
4. September 15, 1980
5. September 22, 1980

Sub-Group on Training

1. August 6, 1980
2. August 22, 1980
3. October 16, 1980
4. November 3, 1980
5. November 21, 1980
6. November 27, 1980



ANNEXURE V

Guidelines for Programmes—Some Suggestions

I. NATIONAL INTEGRATION

General Objective : To develop awareness in children of the meaning of being an Indian national.

Guidelines: The programme should communicate to children information about India as a geo-political unit, which has a multi-faceted nature of beliefs and practices. The basic similarity of needs and beliefs despite differing cultural manifestations should be emphasized. The composite nature of Indian culture in all its aspects should also be vividly portrayed.

II. POPULATION EDUCATION

General Objective: To sensitise the child to the characteristics of population in relationship to available resources.

Guidelines: The objective should be sought to be achieved through developing initially an awareness of the geometric progression in the growth of population. Children should also be exposed to the problems of overpopulation, both in rural and in urban areas, due to the paucity of available resources in India. Emphasis should be laid on the desirability of a small family and the benefits to the children in a small family. The fact that a couple have the means to decide and limit their funds should be brought out.

III. FOOD FOR LIVING

General Objective: To make children aware that food is necessary for living things in order to grow, work, repair themselves and maintain vital functions.

Guidelines : This objective could be achieved through giving the child information about the necessity of food not only for human beings, but for all living things. Further, awareness should be developed in the child that any and every food is not necessarily healthy, but that ideal or good growth in all living things can be achieved only through balanced nutrition.

It should be pointed out that various regions in India have different food habits and that it would be interesting to experiment with foods from other regions. Emphasis may be laid on the fact that this may have to be done not only for interest's sake but also in the interest of the nation. Some exposure should also be given to foods which are consumed in different parts of the world and differ from our own.

IV. ENERGY CONSERVATION

General Objectives : To create an awareness in children of the need to *conserve* commonly used fuels and to develop and use alternate sources of energy as rapidly dwindling supplies of fossil fuel *cannot be replenished*.

Guidelines : Information can be provided to children about the conservation of energy and that the sun is the source of all energy and about commonly used fuels and their sources and preparation. Information should also be provided on alternate sources of energy being developed nationally and the urgent need for this development. The problem deforestation and its further consequences to the nation as a whole should be touched upon while pointing out that we have realised that wood is a good source of energy as it is *replenishable* but that this requires *constant* replanting by the State and the individual.

V. PRESERVATION OF WILDLIFE

General Objective : To make children aware of the symbiotic relationship between man and his environment.

Guidelines : Man's place in the scheme of nature should be shown to children, keeping in mind how very insignificant and puny man is and yet has gained tremendous power and ability due to his ingenuity and development of tools. The devastation done by man using his ingenuity but due to greed in destroying large parts of his environment should be emphasised. The usefulness of other living things to man should be portrayed as well as our ignorance in not understanding all living creatures and their needs. The necessity of the preservation of the species for the sake of preserving the eco-system, extending knowledge and preserving the wide and beautiful variety nature has gifted to us should be explored.

VI. WILD LIFE

General Objective : To develop an understanding of the need for animals as a safeguard for and protection of our own environment since we are inter-dependent.

Guidelines : Programmes should be made to bring about an understanding on the need and care of animals beginning with domestic animals. They should project the idea that we should look upon an animal not as an object but as a form of life which is important and relevant as man's own. Man and animal both have place in nature.

Programmes can also be made to show animals in their natural habitats on their need for food (which, if denied will lead to depredation) and the necessity for maintaining the environment for animal and eventually for man.

Programmes can be made to introduce children to the variety and beauty of animal life and the essentially harmonious pattern of co-existence among them. For instance, the animal kills only to survive. Insects, birds, fish and other forms of animals all form part of the eco-system. We cannot destroy even one species as this is like destroying a link in a chain.

Programmes can be made to show how pets should be cared for with a view to encouraging children to keep pets.

VII. BIRDS

General Objective : To develop interest in an understanding of birds and their role in the eco-system and the benefit they bring to man.

Guidelines : Programmes may be made to show the ways in which birds assist in the preservation of the environment for example, through propagation of seeds carried in their faecal matter leading to whole forests coming up. They also eat insects and bugs which are harmful for the crops. They also provide food to man e.g. eggs. Most birds are songsters and also beautiful to look at.

VIII. TREES

General Objective : To develop understanding amongst children of the place of trees in our life without which neither man nor animal can survive.

Guidelines : Programmes may be made to show the effect of casual destruction at children's level on the growths of trees and plants.

Programmes may be made to develop an awareness of the need to preserve trees so as to avoid destruction of man's own habitat, for example, through floods.

Programmes may be made to show the variety of trees and their contribution to human as well as animal life for example, fruit trees, fodder trees, timber trees and trees which hold the soil. The trees are necessary to preserve the habitat for all life human and animals.

Programmes may be made to motivate children to plant trees and to take care of them.

IX. FIRST AID

General Objective : To develop in children and adults, intelligent responses to common accidents and emergency situations and to demonstrate to them that timely medical intervention is possible and necessary for averting disaster in many situations.

Guidelines : Children and adults can be shown the principles of first aid and situations where appropriate and timely first aid can save lives. However situations where the amateur must not interfere and things the amateur must not do, must be emphasised. Instructions on the practice of first aid in various directions should be imparted e.g.

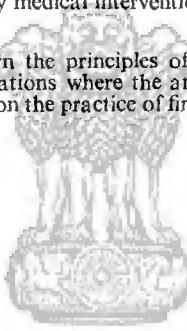
Poison injected

Poisonous bites

Severe cuts, burns and injuries

Falls and fractures

Drowning and shock, eye injuries etc.



X. HEALTH AND HYGIENE

General Objective : To inculcate in children the belief that many factors including care of the person, clean environment and good hygiene contribute to creating and maintenance of health.

Guidelines : The importance of hygiene for good health should be explained and illustrated/demonstrated. The factors in the environment and in the human being contributing to good health and its maintenance as well as the results of bad health habits and poor hygiene to the individual and the nation should be emphasised. Contributions children can make to the community in the maintenance of good hygienic environment should be stressed.

XI. LOCAL AND NATIONAL HISTORY

General Objective : To make children aware of major historical events and characters in their immediate vicinity and in the entire nation and of the impact they have had on the development of our history.

Guidelines : Understanding of major present day political objectives for example, communal harmony could be reinforced and further developed through the portrayal of pertinent historic incidents both local and national. These incidents should not be centred round history but myths and legends should also be utilized.

XII. CREATIVE ARTS

General Objective : To introduce children to the making of objects which are not only beautiful but also useful and thereby inculcating in them a feeling of beauty for quality and for good taste according to the accepted norms.

Guidelines : Programmes can be made to show the making of clay objects, for example, toys, murtis and lamps.

Programmes can be made on the making of toys by children with materials available in their environment.

Programmes may be made to encourage children to write story books, to make drawings, to illustrate them and to share these books with others.

Programmes can be made to introduce children to beautiful things made by others with the object of promoting a feeling of excellence and inculcating the desire to do all things well.

Programmes can be made to show children's art classes so that the children feel that they can also do something similar and on the assistance that children provide to parents whatever may be the work situation.

XIII. NATIONAL INTEGRATION

The theme will be sub-divided into three broad units :

Unit I : Unity of Religion

Unit II : Many Languages But One Man

Unit III : Our Country and its People.

UNIT I : Unity of Religion

Programmes based on stories available in history and religious literature about the secular outlook and behaviour of saints and sufis like Kabir, Tulsi Das, Guru Nanak Dev, Shaikh Moimuddin Chishti of Ajmer, Nizamuddin Aulia, Amir Khusro and a number of others from all over the country, specially those whose names are associated with the Bhakti movement.

Programmes to explain the meaning and purpose, both religious and social, of our main festivals like Id, Holi, Diwali, Christmas etc.

Programmes to acquaint children with the different modes of prayer in Mosque, Temple, Gurudwara and Church emphasising the Unity of purpose and universality of their messages.

UNIT II : Many Languages but One Man

Programmes to enable children to learn words of common objects in different languages. Many words are common in different languages or have very minor variations. Programmes will lead children to appreciate that languages are just different modes of communication and in no way divide people into different categories.

UNIT III : Our Country and Its People

Programmes dealing with people living in different States on their food, dress, occupations, entertainments etc. to show our unity in diversity. Differences are due to climatic and geographical variations. Basically all human beings have the same needs, urges and emotions.

Within the increasing mobility of people from one State to another, food, dress and entertainments of one State are being adopted by people of other States with great enthusiasm.

XIV. POPULATION EDUCATION

General Objective : To sensitise the child about the characteristics of population, especially in relationship to resources of the society.

Guidelines : Three categories of programmes are visualised : those that explain the fundamental concepts of population ; those that will treat population as a problem in the developmental efforts of society and those that offer some solution to these problems.

(i) Programmes would deal with various dimensions of the concept of population such as :

Geographical Patterns	Nomads in deserts, Jungle tribes in forests, rural-urban distribution of population, growth of cities and village communities, industrial area, regional imbalances and variations	Environmental factors lead to differential patterns of population. How activities of the people are linked to the resources of the area.
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Cultural Patterns	Craft and craftsmen, rituals and customs, tribesmen & countrymen, festivals and communities	Population provides variety & diversity & this contributes to cultural richness. Cooperation is thus an essential element of population. Without cooperation population does not evolve into a society. Because people cooperate in the productive processes of society population is essentially an asset. It becomes a problem when it crosses an optimum level of relationship to resources or when diversity becomes a source of tension.
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Growth Patterns	Birth patterns death patterns expectation of life sex ratio	Growth presents the problem of bringing up of children and their socialisation, especially in relation to education, nutrition and health, occupation and standards of living.
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Migration Patterns	Rural to urban rural to industrial rural to rural	Migration is a part of living and people keep on migrating for various reasons.
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(ii) Population problem will be portrayed as a serious problem influencing development and posing a problem of management :

Member	sheer size, density, crowd dependence	Number raises the problem of resources of a society and its proper organisation. The dimension of management becomes complex when faced with the task of equitable distribution.
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Resources	availability, utilization, distribution	A problem of distributive justice and providing adequate means to all members of the Society.
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(iii) Small size family controls on population parenthood marriage system and age of marriage.	The solutions to the population problems are essentially cultural and as such the appeal in the visuals should be rather psychological. It is the social preparing that is important.
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XV. SELECTION OF THEMES TAKING SPECIAL NOTE OF THE INHERENT ADVANTAGES OF THE VISUAL MEDIUM IN EXPLAINING ABSTRACT CONCEPTS ARE LISTED BELOW :

1. Direct education or instructional programmes using the medium of *models*, *time-lapse photography*, *animation* and *drawings* can be developed. These techniques can enable the child to understand complex natural processes in a simple manner. For the child, surrounded as he is by an abounding vegetation, animal life, natural and manmade materials, natural cycles, simple questions like how do animals have little babies, why are leaves green, how plants grow, are questions that are left unanswered or at best picked up randomly. *Visual techniques to explain abstract concepts* can be yet another classification for throwing up ideas for themes of programmes.

Examples

(i) Time lapse Photography

(a) Life Sciences

Pollination
photosynthesis
emergence of the butterfly
Growth of plants etc.

(ii) Models

(a) Concepts of

size
shape
volume
space
day and night
the map
latitude
longitude

(iii) Animation

(a) Natural processes

formation of coal
formation of petroleum
seasons
rain, snow etc.
historical time etc.



2. Another major goal area could be to *awaken the child to the knowledge that there is a world beyond his village*. Information can be disseminated by focussing on such services; eg. postal service, banks, transportation media (radio, TV) that he is a direct consumer of knowledge of the network. Availability and functioning of these at a national level will broaden his outlook and help him perceive that he is a part of an immense whole.
3. *Career awareness* : The underlying premise for this instructional goal is that the child should be able to aspire to different career roles and recognize their attainment to be a result of different skills, interests and preparation and also that their attainment is not contingent upon sex, race, or any other handicapping situation. The value of individual effort and productivity can be met through the development of this goal.

XVI. OTHER SUGGESTIONS

1. Forests and Wild life

These programmes should expose children to the grandeur and sublimity of forests, the forest life, wild animals and wild life.

They should expose children to wild animals, their way of living, their modes of locomotion, rearing of off-springs food, places of living etc.

They should develop in children a sense of oneness with animals, attitude of kindness and loving care and a habit to preserve trees. These programmes should also motivate children to plant more trees and look after them.

2. Rivers

Programmes should expose children to the main rivers of the country, rivers in various moods some concepts like source of river, Delta etc.

These programmes should also show how rivers are being polluted and what should be done to prevent it.

3. Some festivals of India

These programmes should bring various festivals into the classroom and acquaint students with the myth, legends and history associated with each festival.

The aim should be to bring out the oneness in the diversity of the country.

4. A visit to Delhi/Bombay/Calcutta/Madras

These programmes should help the students to view the important places in these cities and know the history attached with them.

The objective again is to focus unity in the diversity and develop national integration and harmonious living.

5. Desh-ka-Sapoot

These programmes should centre round important personalities who have brought name and honour to the country. These programmes should depict both lives and teachings of the important personalities like Mahatma Gandhi, Ravindra Nath Tagore, C.V. Raman, Lok Manya Tilak, Ranjit Singh, Dr. Zakir Hussain etc. (the names of these personalities should be finalised by the panel of social scientists.). Care should be taken that only non-controversial personalities are included in the T.V. programmes. The overall objective should be to develop a sense of national pride.

6. National Song, National Anthem and National Flag

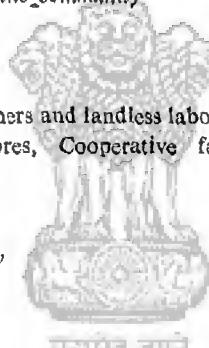
XVII. PROGRAMMES FOR OUT-OF SCHOOL CHILDREN

1. Healthful living

- Health and sanitation
- Advantages of using dry latrines
- Diseases spread by faces
- Household water disposal
- Disposal of carcasses
- Garbage disposal
- Epidemic diseases and preventive measures
- Use of disinfectants
- Vaccination
- Use of local medicinal plants and their products
- General measures for protecting the health of the community
- Correct postures while eating, relaxing, baby sitting, washing, carrying load, etc.

2. The role of the developmental agencies in the community

- Village level worker
- Primary Health worker
- Village Panchayat
- Gramin Bank (for financing marginal farmers and landless labour under the self-employment schemes) Cooperative (Cooperative societies, Cooperative stores, Cooperative farms and Cooperative banks)
- Veterinary Services
- Other welfare services.



3. Developmental aspects in the community

- Utilisation of national resources
- Conservation of forests/ reforestation
- Avoiding pollution
- Right utilisation of land and water resources
- Erosion control
- Preservation and enhancement of other natural and Energy resource.

Improving yields

- Dissemination of modern techniques of production to secure higher yield in productive activities in the community
- Appropriate Technology leading to less strenuous work with the same output
- The importance of planned effort

Utilisation of Income

- The need and importance of saving schemes
- Wasteful expenditure in marriages, community feasts, etc, and how best to reduce it
- How to prepare balanced budget
- How investments should be planned
- Marketing

Floods

- How floods are caused
- Soil erosion due to floods
- Havoc caused by floods

Animal husbandry

- Dairy farming
- Poultry farming
- Sheep rearing
- Fishery
- Sanitation in animal habitations.

Prevention of fire hazards

At home

On the farm

First aid in emergency

Transport and communication in the community

Tracks and pathways, the need for maintaining tracks and how many pathways across the fields result in loss.

The movement of goods and the role of roads and rails

Communication with the outside world

Communication skills—inter-personal and social

Cottage industries and self-employment

A variety of situations should be covered

Nutrition

Kitchen gardening

Preservation of local fruits and vegetables

Utilisation of local products for a balanced diet

4. The social change*Civic life*

Concept of equality under the Indian Constitution

The rights and duties of citizens

Casting a vote—what it means

Desirable social and moral values

Freedom movement

Great men of India

Historical places

Social reformers

Extinction of the following attitudes

(Through dramas, stories, exposition of situations and from the examples of greatmen)

Fatalism

Casteism & untouchability

Communalism

Superstition

Poverty.



ANNEXURE VI

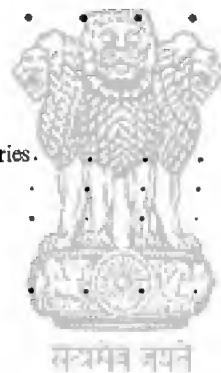
Equipment for production centre

Nomenclature	Qty	Cost (in lakhs)
A. T.V. Studio		
*1. Electronic plumbicon camera	2	24.00
*2. Electronic vidicon camera	1	
3. Monitor with trolley	1	0.10
4. Intercom facility (cost included under item D 10)	..	..
5. Loudspeaker	1	0.01
6. Stand for mike	2	0.002
7. Boom stand.	1	0.25
8. Mikes including lapel mikes	2	0.10
9. Head set	3	0.003
10. Cyclorama	1	0.35
11. Warning lights	3	0.005
12. Lights	30	0.60
13. Lighting grid	1 lot	0.50
14. Clock	1	0.005
15. Airconditioning units (7.5 Tons each)	3	2.25
	TOTAL	28.175
16. Spares 20%		5.635
	GRAND TOTAL	33.81
B. Video Production Room		
1. 8x2 Video production cross bar & switcher including control panel	1	0.50
2. Picture monitors 15"	6	0.66
3. Picture monitors 20"	1	0.11
4. Intercom amplifier (cost included under item D 10)	1	..
5. Loudspeaker with cabinet	1	0.01
6. Head set.	1	0.001
7. Intercom mike (cost included under item D 10)	1	..
8. Remote control panel for telccine (included under F)		..
9. Clock	1	0.003
	TOTAL	1.284
10. Spares 20%		257
	GRAND TOTAL	1.541
C. Audio Production		
1. 8 Channel audio mixer console with patch panel, monitoring amplifier, loudspeaker etc.	1	0.80
2. Intercom mike (cost included under item D 10)	1	..
3. Console tape recorder	2	1.40
4. Disc player (3 speed)	1	0.16
5. Audio tapes.	50	0.02
	TOTAL	2.38
6. Spares 20%		0.48
	GRAND TOTAL	2.86

*Imported equipment, cost inclusive of customs duty.

1	2	3
D. Camera Control Unit		
1. 19" racks for mounting equipment & CCU control panel mounting arm	3	0.04
2. Monitors 5" (cost included in item A1)	3	
3. Waveform monitor with switcher	1 set	0.15
4. Head set for intercom (cost included under item D 10)	1	
5. Sync pulse generator	2 }	0.25
6. Changeover unit	1 }	
7. Video distribution amplifier	3	0.15
8. Pulse distribution amplifier	3	0.15
*9. Test signal generator	1	1.00
10. Intercom amplifier & distribution exchange, mikes & head sets	1 set	0.35
TOTAL		2.09
11. Spares 20%		.42
GRAND TOTAL		2.51
 E. Studio lighting control unit		
1. Switch board 3 phase with switches incorporating miniature circuit breaker, power plugs and sockets (Rey Rolle).	1	0.50
2. Auto transformer/electronic control unit for 30 light points	}	
3. Monitor 20"	1	0.11
4. Video selector switch for monitor	1	0.02
5. Intercom facility (cost included under item D 10)		
TOTAL		0.63
6. Spares 10%		0.063
GRAND TOTAL		0.693
 F. Telecine Room		
1. Multiplexer 3 input one output complete with 2 x 16mm projectors lenses, stand, mounting shelf, audio video monitoring, remote control for projector etc. 35mm slide projector.	1 for item 1 & 2	21.00
2. Vidicon camera, CCU panel mounting shelf, monitoring for audio & video, VDA etc.	1	
3. Monitor 20"		
4. Intercom facility (cost included in item D 10)		
5. Clock	1	0.003
TOTAL		21.003
6. Spares 20%		4.20
GRAND TOTAL		25.203
 G. Video Tape Recording Room		
*1. 3/4" Umatic electronic editing video tape recorder	3	3.00
2. Digital time base corrector (DTBC)	2	4.20
3. Switcher for video selection	1	0.005
4. Wave form monitor	1	0.150
5. Picture monitor 19"	1	0.11
6. Cables for connection	1 set	0.15
7. Audio monitoring loudspeaker for system monitoring	1	0.02
8. Picture monitor (audio and video)	3	0.07
9. Switches for audio selection	1	0.005
10. Clock	1	0.003
11. Intercom facility (cost included under item D 10)		..
TOTAL		7.733
12. Spares 20%		1.547
GRAND TOTAL		9.280

1	2	3
H. Video Preview and Editing Room		
*1. 3/4" Umatic video cassette recorder with electronic editing facility	4	4.00
2. Audio video monitors	4	0.09
*3. Remote control electronic editing control	2 sets	0.70
*4. Cables for inter-connection	4	0.005
	TOTAL	4.795
5. Spares 20%		0.959
	GRAND TOTAL	5.754
 I. 3/4" Umatic Field Recording Unit		
*1. 3/4" Umatic portapak complete with camera and cassette recorder, stand, battery, battery adaptor	2 sets	1.6
2. Mikes	6	5
*3. Cassettes (20 minutes)	48	0.20
*4. Cassette adaptor	10	0.02
*5. Cassettes (60 minutes)	96	0.40
6. Field lighting equipment	2 sets	0.10
	TOTAL	2.32
7. Spares 20%		0.464
	GRAND TOTAL	2.784
 J. 16 mm Film Unit		
*1. 16mm film camera complete with accessories	1	3.10
*2. Sound equipment	1 set	1.20
3. Field lighting equipment	1 set	0.50
	TOTAL	4.80
4. Spares 20%		0.96
	GRAND TOTAL	5.76
 K. 16mm Film Editing		
*1. 16mm film editing table	1	2.7
2. Rewinder	1 set	0.08
*3. Splicer	1	0.08
	TOTAL	2.78
4. Spares 20%		0.556
	GRAND TOTAL	3.336
 L. 16mm Film Preview & Projection Room		
1. 16mm film projector	1	0.12
2. Rewinder	1 set	0.08
*3. Splicer	1	0.08
	TOTAL	0.20
4. Spares 20%		0.08
	GRAND TOTAL	0.28
 M. 16 mm Film Animation		
*1. 16 mm film animation equipment complete with accessories	1 set	3.00
	TOTAL	3.00
2. Spares 20%		0.60
	GRAND TOTAL	3.60

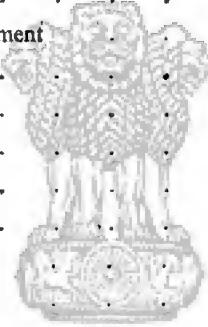


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1	2	3
N. Dark Room		
*1. Still photographic equipment and dark room facility	1 set	0.80
	TOTAL	0.80
2. Spares 20%		0.16
	GRAND TOTAL	0.96
O. Graphic and Reprographic Equipment		
1. Electronic stencil cutter and electric duplicator	1 set	
*2. Electrostatic copier	1 set	3.20
*3. Hot print press	1 set	
	TOTAL	3.20
4. Spares 10%		0.32
	GRAND TOTAL	3.52
P. Test, Measuring & Miscellaneous Equipment		
1. Oscilloscope	1	6.00
2. Low distortion oscillator	1	
3. Wow & flutter meter	1	
4. Multimeters	1 lot	
5. Light meters	1 lot	
6. Film & laboratory instruments	1 lot	
7. Miscellaneous e.g. tools, automatic voltage regulator, vacuum cleaner, film and sound test tapes etc.		
	TOTAL	6.00
Q. Airconditioning		
Window type airconditioner (1.5 tons each)	8	0.96
	TOTAL	0.96
R. Electrical Works		
Electric switch gear, earthing, distribution board, AVR wiring and erection, fire fighting equipment, emergency lights etc.		2.00
	TOTAL	2.00
S. Technical Furniture		
1. Production tables		1.00
2. Monitor racks		
3. Revolving chairs		
4. Almirahs		
5. Trolleys		
6. Any other furniture		
	TOTAL	1.00
T. Installation Expenditure		
Material & Labour		2.728
	TOTAL	2.728
U. Civil Works (estimated area 1020 sq. mts. @ Rs. 2000 per sq.m.)		20.40
	TOTAL	20.40
V. Acoustic treatment, aircondition ducting, flooring etc.		4.00
	TOTAL	4.00
W. Production cost of 200 hours of programmes @ Rs. 10,000 per hour		20.00
	TOTAL	20.00

TOTAL A—W

	Cost (in lakhs)
A. T.V. Studio	33.810
B. Video Production Room	1.541
C. Audio Production	2.860
D. Camera Control Unit	2.510
E. Studio Lighting Control Unit	0.693
F. Telecine Room	25.203
G. Video Tape Recording Room	9.280
H. Video Preview & Editing Room	5.754
I. 3/4" Umatic Field Recording Unit	2.784
J. 16mm Film Unit	5.760
K. 16mm Film Editing	3.336
L. 16mm Film Preview & Projection room	0.220
M. 16mm Film Animation	3.600
N. Dark Room	0.960
O. Graphic and Reprographic Equipment	3.520
P. Test, Measuring and Miscellaneous Equipment	6.000
Q. Airconditioning	0.960
R. Electrical Works	2.000
S. Technical Furniture	1.000
T. Installation Expenditure	2.728
U. Civil Works	20.400
V. Acoustic Treatment etc.	4.000
W. Production Cost	20.000
	<hr/>
	158.919
	rounded to
	159.000
	for 10 Centres : 10 × 159.00
	1590.00
	or 15.9 crores.



सर्वामेव जयते

ANNEXURE VII

Equipment for film processing and sound transfer unit

A. Film Processing Facility

1. 16mm Film Processing Plant complete with all accessories	1.50
	TOTAL 1.50
2. Spares 20%	0.30
	GRAND TOTAL 1.80

B. Film Sound Transfer Facility

*1. 16mm sound transfer equipment complete with all accessories	13.00
	TOTAL 13.00
2. Spares 20%	2.60
	GRAND TOTAL 15.60

C. Film Printer

*1. 16mm film printer complete with all accessories	2.00
	TOTAL 2.00
2. Spares 20%	0.40
	GRAND TOTAL 2.40

D. Production Cost

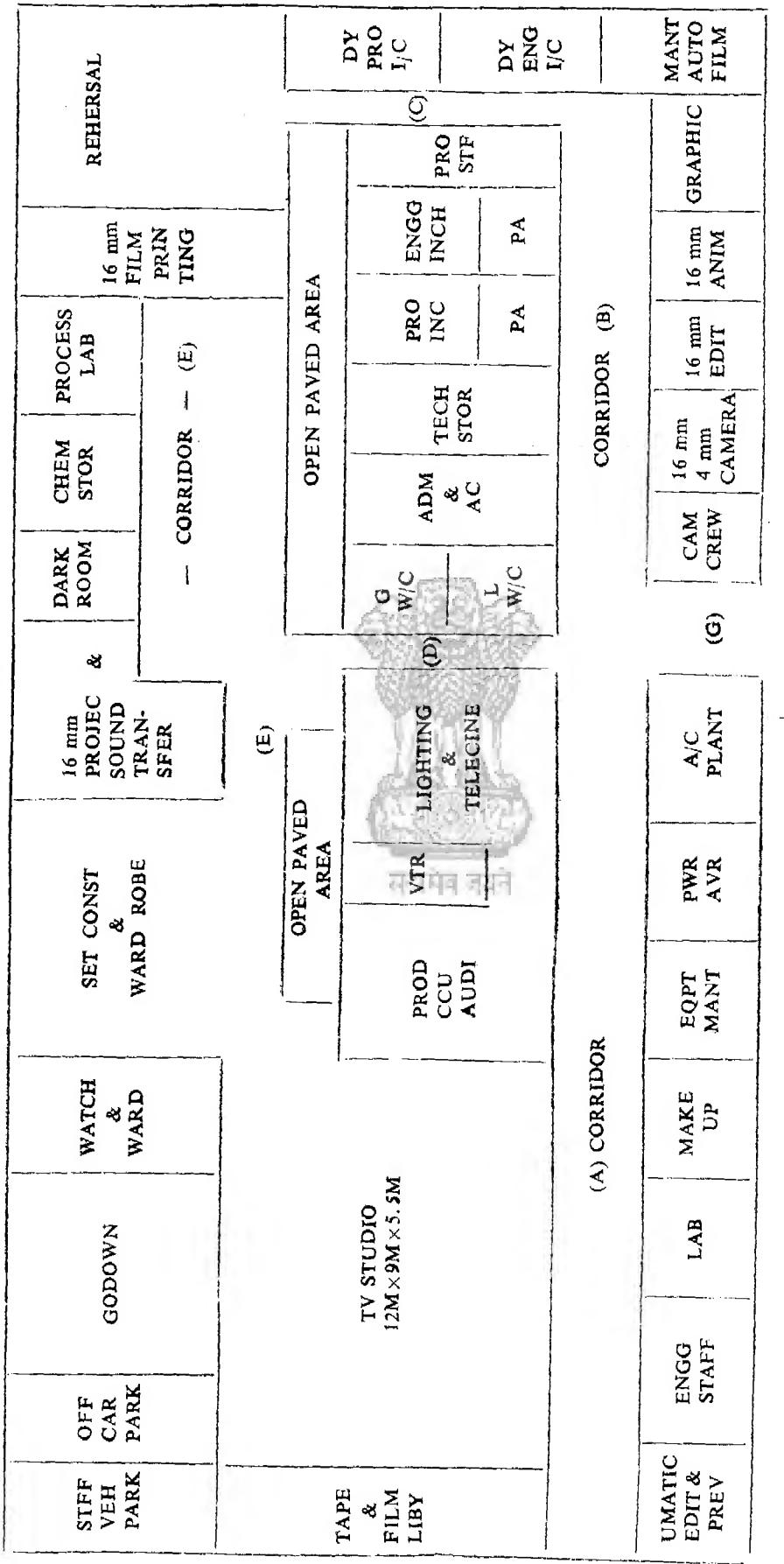
TOTAL A--D 34.80 lakhs
or 35.00 lakhs

*Imported equipment, cost inclusive of customs duty.



ANNEXURE VIII

Building Plan of Production Centre



TOTAL COVERED AREA = 800 SQM 1020

SCALE: 1:240

AYOUT OF
PROPOSED
ETV STUDIO
SET UP FOR INSAT

Building Plan of Production Centre

Nomenclature	Size	Area
1. T. V. studio	40 ft. x 30 ft.	1200 sq. ft.
2. Tape & film library	30 ft. x 10 ft.	300 sq. ft.
3. Prod. CCU, audio, VTR, lighting, telecine	50 ft. x 20 ft.	1000 sq. ft.
4. Set construction and ward robe	40 ft. x 16 ft. 6 ft. x 6 ft.	676 sq. ft.
5. 16 mm Projection & sound transfer	20 ft. x 10 ft. 10 ft. x 6 ft.	260 sq. ft.
6. Dark room	10 ft. x 10 ft.	100 sq. ft.
7. Chemical store	10 ft. x 10 ft.	100 sq. ft.
8. Process laboratory	20 ft. x 10 ft.	200 sq. ft.
9. Printing 16 mm film	10 ft. x 15 ft.	150 sq. ft.
10. Rehersal	15 ft. x 25 ft.	375 sq. ft.
11. Umatic editing & preview	20 ft. x 10 ft.	200 sq. ft.
12. Science laboratory	10 ft. x 10 ft.	100 sq. ft.
13. Makeup	10 ft. x 10 ft.	100 sq. ft.
14. Maintenance (Video)	15 ft. x 10 ft.	150 sq. ft.
15. Maintenance (audio & films)	15 ft. x 10 ft.	150 sq. ft.
16. Power AVR.	10 ft. x 10 ft.	100 sq. ft.
17. A/C plant	15 ft. x 10 ft.	150 sq. ft.
18. 16 mm edit	10 ft. x 10 ft.	100 sq. ft.
19. 16 mm animation	10 ft. x 10 ft.	100 sq. ft.
20. Graphic	10 ft. x 15 ft.	150 sq. ft.
21. Engg. staff	20 ft. x 10 ft.	200 sq. ft.
22. Camera crew	10 ft. x 10 ft.	100 sq. ft.
23. Production staff	20 ft. x 10 ft.	200 sq. ft.
24. Production I/C	20 ft. x 10 ft.	200 sq. ft.
25. Engineering I/C	20 ft. x 10 ft.	200 sq. ft.
26. Dy. Production I/C	15 ft. x 10 ft.	150 sq. ft.
27. Dy. Engineering I/C	15 ft. x 10 ft.	150 sq. ft.
28. Technical store	20 ft. x 10 ft.	200 sq. ft.
29. 16 mm Umatic filed equipment room	10 ft. x 10 ft.	100 sq. ft.
30. Adm & A/C	15 ft. x 20 ft.	300 sq. ft.
31. Facilities (W/C)	20 ft. x 10 ft.	200 sq. ft.
32. Staff cycle & scooter parking	12 ft. x 10 ft.	120 sq. ft.
33. Office car park	12 ft. x 10 ft.	120 sq. ft.
34. Godown	12 ft. x 20 ft.	240 sq. ft.
35. Watch & ward	12 ft. x 10 ft.	120 sq. ft.
36. Corridors & foyers (A to G)	..	1940 sq. ft.
	Total	10201 sq. ft.
	Say	10201 sq. ft.

ANNEXURE IX

List of Institutions with film/video/VTR equipment

Andhra Pradesh

Agricultural College, Bapatla 522101

Chandigarh

Central Scientific Instruments Organization Sector 30, Chandigarh 160020
Punjab State Audio Visual, Education and Film Library, Sector 17, Chandigarh
Technical Teachers' Training Institute, Sector 26, Chandigarh 160019

Delhi

Centre for Educational Technology, Sri Aurobindo Marg, New Delhi 110016

Gujarat

Department of Education, South Gujarat University, Udhana-Magdalla Road, Surat
National Institute of Design, Paladi, Ahmedabad 380007

Karnataka

Central Institute of Indian Languages, Mysore 570006
Regional College of Education, Mysore 570006
Visvesvaraya Industrial & Technological Museum, Kasturba Road, Bangalore 560001

Madhya Pradesh

The Christian Association for Radio & Audio Visual Service, 15 Civil Lines, Jabalpur

Maharashtra

Department of Extension, College of Agriculture, Akola 444104
Indian Institute of Technology, Powai, Bombay 400076

Tamil Nadu

Department of Education, University of Madras, Madras 600005
Indian Institute of Technology, Madras 600036
Institute of Film Technology, Adayar, Madras 600020
Technical Teachers' Training Institute, Adayar, Madras 600020

Uttar Pradesh

G.B. Pant University of Agriculture and Technology, Pantnagar, Dist. Nainital
Regional Directorate of Apprenticeship, Training Centre, Udyog Nagar, Govind Puri, Kanpur 208022
Television Centre, Indian Institute of Technology, Kanpur 208016

West Bengal

Indian Institute of Technology, Kharagpur 721302
Regional Institute of Printing Technology, Raja Subodh Mullick Road, Jadavpur, Calcutta

ANNEXURE X

Manpower for Production Centre

(i) Engineering and Auxiliary Staff for TV Studio

Engineering-in-Charge	1
Deputy Engineering-in-Charge	1
Assistant Engineer	1 (vision mixer)
Engineering Assistant	5 (CCU, audio mixer, light control, telecine mixer for sync sound)
Technician	4 (audio mixer, light control for centralised airconditioner plant, airconditioner plant for film area).
Projectionist	3 (telecine, 16mm projection room, sync sound equipment room).
Khalasi	8

(ii) Maintenance Staff

A. Video

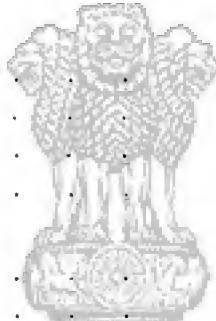
Assistant Engineer	1
Engineering Assistant	1
Technician	1
Khalasi	1

B. Audio and Film

Assistant Engineer	1
Engineering Assistant	1
Technician	1
Khalasi	1

C. Electrical

Electrician	1
Khalasi	1



If the studio works for a second shift, the following additional staff will be needed for each shift :

Assistant Engineer	2
Engineering Assistant	5
Technician	4
Projectionist	1
Electrician	1
Khalasi	8

To maintain technical stores the following category of staff will be needed :

Supervisor	1
Lower Division Clerk	1
Khalasi	1

(iii) Production Staff

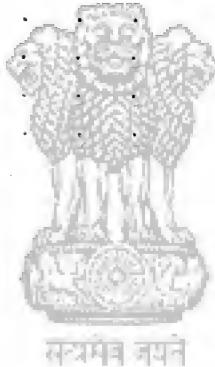
Non Shift Group

Production-in-charge	1	Model Maker	1
Deputy Production in-charge	1	Puppet Design Supervisor	1
Producers	10	Puppet Assistant	1

Production Assistant	5	Film Processor	1
Scriptwriters	4	Assistant to Film Processor	1
In-charge Evaluation	1	Store Keeper	1
Copiest-cum-General Assistant and Typist	4	Librarian	1
Senior Graphic Chief and Visualiser	1	Sound Recordist	3
Photo and Animation/Graphic Section Artist	4	Lighting Assistant	2
Animation Camera Animator and Photographer	1	Cameraman	3
Set Designer (Workshop-in-charge)	1	Editor (Video Film)	2

Shift Group for One Shift

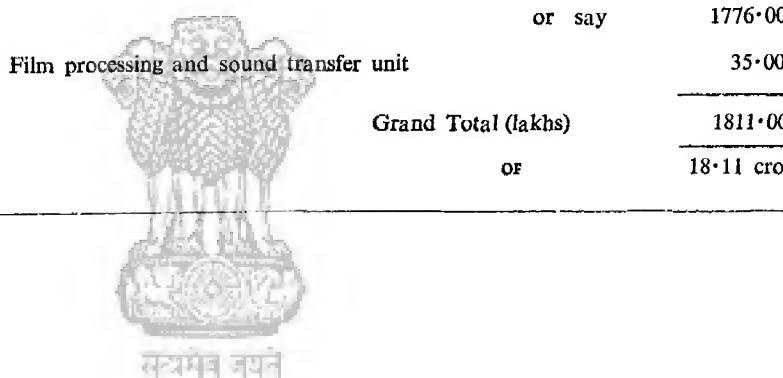
Cameraman	3
Editor (Video Film)	2
Laboratory Assistant	1
Set Supervisor	1
Carpenter	1
Painter	1
Floor Assistant	3
Make-up Artist	1
Wardrobe Assistant	1
Floor Manager	1



ANNEXURE XI

Budget Proposals for the Sixth Plan
ETV Production Centres

Year	No. of Production Centres	Capital			Recurring		Total in lakhs
		Equipment	Building	Installation	Production cost	Directorate of Education TV and Planning & Monitoring Cell	
1980-81	..	257.6	24.40	..	..	4.20	286.20
1981-82	..	291.1	48.80	3.28	6.00	16.00	365.18
1982-83	3	380.8	49.80	8.00	40.00	16.00	498.60
1983-84	4	156.8	73.20	8.00	100.00	16.00	354.00
1984-85	3	33.6	48.80	8.00	170.00	16.00	276.40
TOTAL	10	1119.9	244.00	27.28	316.00	68.20	1775.38
						or say	1776.00
						Film processing and sound transfer unit	35.00
						Grand Total (lakhs)	1811.00
						OF	18.11 crores



Training Courses in Educational Television

1. General Orientation Course

This course will form an integral part of all training courses. The duration will be 4 weeks. It will be in three parts as follows :

Part I : *Policy and role of ETV for development*

National policy of television for education

The concept and perspective of development

Potential of the television medium

Special requirements of educational television

Making an ETV programme

Resources of ETV and their interdependence

Creativity in using low-cost methods and techniques

Communication through visuals

Aesthetics and presentation techniques

Need for evaluation of visuals

Part II : *Technology of Television*

How television works—transmission and reception

Video recording

TV programme production process—studio organisation, specialisation and co-ordination

TV terminology

Part III : *Evaluation*

Concept and role of evaluation

Introduction to scientific evaluation, methods and techniques

Preparation of research design

Techniques of interviewing

Selection of respondents

Analysis and assessment of data

2. ETV scriptwriting

ETV scriptwriting is a new area in our country and, therefore, there are very few people with experience or knowledge related to scriptwriting for television or for films. Proper selection procedures need to be adopted to select personnel who have potential for becoming good scriptwriters.

Qualifications

Essential

(i) Bachelors' degree

(ii) Aptitude for and experience in creative writing for children

Desirable

(i) Degree or diploma in teaching, journalism or communication

(ii) Experience in creative arts

(iii) Age below 35 years

Duration

4 + 8 weeks

Course Design

The training will be provided in two phases the first phase being an exposure to the general orientation course. In the second phase lasting 8 weeks the candidates will be trained in the techniques of scriptwriting for educational television programmes. Emphasis will be laid in developing scripts within the framework of the approved policy and plan of the programme for children both in school and out-of-school. The trainees will also be exposed to the fundamentals of programme production. Some of the scripts developed will be produced with the help of production staff. The programmes so produced will also be tried out and evaluated for purposes of discussion and better understanding.

While the medium of instruction will be Hindi and English, the participants will be free to develop script in their own languages.

General objectives

to develop a pool of trained ETV scriptwriters

to utilise the services of personnel available in educational institutions and free-lance writers for the writing of scripts for ETV.

Specific Objectives

- to develop appreciation of the special requirements of writing for film and television
- to impart skills in developing scripts for educational television programmes
- to acquaint participants with the processes involved in production of programmes
- to provide working knowledge of portapak video programming
- to develop ability to evaluate or organise evaluation of the programme.

Course Content**Part I: Training in Writing Skills*****Educational aspects***

- to specify and use educational objectives and develop them into teaching materials
- to seek and select information, to identify sources, to analyse, break down and order information into logical sequences
- to develop programme briefs and support materials in varying formats
- to select media and specify the amount of materials to be covered in a programme
- to develop an awareness of the process of evaluation and ability to use evaluation data

Technical aspects

- to specify and select technical and other resources required for a programme
- to specify stages in television production and identify the role of script writers and 'producers'
- to layout scripts
- to operate portapak video equipment and still cameras

Writing

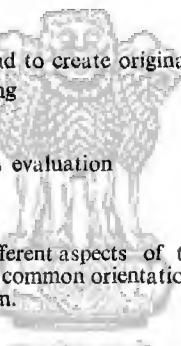
- to understand the nature of script writing and to create original, effective and practical visual ideas
- to structure ideas for television programming

Part II : Practical Training and Evaluation

- to produce a programme and organise its evaluation

3. Visual inputs for ETV

The course is intended for persons engaged in different aspects of the visual arts. It is considered necessary that people with different specialisations should be brought under a common orientation programme so that they can develop an appreciation of each others role and learn to work as a team.

**Trainees**

They will be selected from personnel in position in different sections of State Departments of Education, Information and Publicity and Extension e.g. Audio-Visual Units, ET Cells, Science Departments, Teacher Training Colleges, Art Institutions, Publications Departments and Extension Centres. The course will be open to interested personnel from Doordarshan also.

Duration

4+6 weeks.

Course Design

During the first four weeks the trainees will be exposed to the general orientation course. They will then be divided into groups. The next four weeks will provide specialised group training in one of the six different aspects—graphics, simple animation, models, puppets, photography and portable video production. There will be provision for inter-group discussion and interaction with a view to deciding upon and developing the most suitable visuals for scripts. During these four weeks the trainees will be exposed to select films and TV programmes and helped to identify sequences or successful visuals and to study the techniques used therein.

The last two weeks will provide opportunity for intensive practical work leading to the production of ETV programme on the basis of scripts used in the training programme. The programmes will be tried out, evaluated and discussed for improvement.

General Objectives

- to develop a pool of trained personnel for visual inputs required for educational television
- to utilise services of available personnel such as graphic designers, photographers etc. in the production of educational television programmes

Specific Objectives

- to create realisation of the importance of visual inputs and develop knowledge and skills required in production of ETV programmes
- to acquaint the participants with principles and procedures involved in the development of the visual inputs
- to enhance the skills of participants in different areas by involving them in the actual production process
- to provide working knowledge of the theory and practice of portapak based video production and to develop ability to organise and undertake a small scale video production

Course Content**Group I : Graphics**

- Types of graphics needed for TV
- Aesthetics in TV graphics
- Standard aspect ratio-margin for TV
- Storyboard
- Titles or captions
- Large illustrations for panning — airved, diagonal, directional, etc.

Filmograph

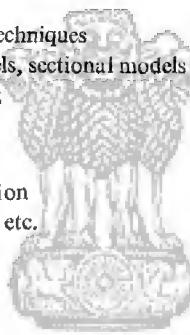
- Legibility, clarity, highlighting and emphasising by overweight of line, tone, masking etc.
- Image combination, pop on, wipes etc.
- Animated flow transparencies, such as overlays

Group II : Simple Animation

- Educational potential of animation techniques
- Principles of animation
- Importance of visualisation by means of storyboard
- Types of animation i.e. cutouts, stick cutouts, cellophane and overhead projection
- Animation of pictures through camera
- Progressive art work animation technique
- Preparation of exposure sheet

Group III : Models

- Use of models and objects
- Material, construction and making techniques
- Types of models such as working models, sectional models etc.
- Diorama technique in scene planning

**Group IV : Puppets**

- Communication through puppets
- Material and techniques of construction
- Types of puppets such as glove, rod etc.
- Scene props planning and designing
- Importance of lighting

Group V : Photography

- Types and formats of photographs
- Photographic films and their characteristics
- Effects of exposure and development on the quality of negatives
- Photographic papers, their grades and surfaces
- Special printing techniques, base-relief, tone separation, line images, photograms etc.
- Uses of texture screens
- Intentional double and multiple exposure
- Combination printing
- Elimination of unwanted figures and backgrounds
- Light sources for photography—sunlight; artificial light; floods and spots; available light, and electronic flash
- Making of film strips, slide-making, copying
- Close-up photography; supplementary lenses, extension rings and bellows
- Photo-micrography (photography through a microscope)
- Uses of filters—correction filters and contrast filters
- Principles of colour photography

Group VI : Portapak Video Production

- Portapak—various parts and their functions
- Using camera with and without tripod
- Different types of shots and their composition
- Elementary lighting
- Shooting of sequences for in-camera editing
- Planning and shooting of sequences for electronic editing
- Practice in electronic editing
- Audio dubbing and mixing—music, sound effects and commentary
- Need to evaluate production
- Minor repair and maintenance of equipment and video tapes

4. ETV Production

For any producer, basic knowledge of ETV script writing is absolutely essential. The participants for the course should preferably be selected from amongst those who have undergone the 12 week training course in ETV scriptwriting. The duration of the training course in production will then be 8 weeks only. The participants will be exposed to knowledge and skills required for ETV production and also involved in practical work leading to the production of ETV programmes.

Qualifications

Essential

- (i) Bachelor's degree
- (ii) Aptitude for an experience in creative writing for children
- (iii) Basic knowledge of ETV scriptwriting

Desirable

- (i) Degree or diploma in teaching journalism or communication
- (ii) Experience in creative arts
- (iii) Age below 35 years

Duration

8 weeks

Course Design

In the first phase of four weeks the trainees will be exposed to basic skills that a producer should acquire for the production of an interesting and meaningful programme. In the second phase of four weeks he will be required to plan and produce at least two programmes. Scripts developed by trainees during their training in scriptwriting would be utilised for production. The programmes so produced will be tried out on the target audience and feedback will be obtained for purposes of discussion and better understanding. The programmes will be redesigned and produced again, if necessary. The training course will be production oriented.

While the medium of instruction will be Hindi and English, the participants will be free to develop scripts in their own languages.

General objective

- to develop a pool of trained persons in ETV production

Specific objectives

- to develop appreciation of the requirements of the production of ETV programmes and films
- to develop ability of studio management
- to impart skills required in production—ETV programmes
- to develop ability to evaluate or organise evaluation of the programmes

Course Contents

Part I : (i) Creative use of television equipment

TV terminology

Different kinds of cameras, lenses, microphones, lights

Basic shots, composition and judicious use of different shots for meaningful communication

Vision mixing and special effects control panel

Camera control unit

Video tape recorder

Film camera and equipment for sync sound

Techniques of editing

Animation camera and its use

Accessories in an OB Van

(ii) Knowledge of resources for TV programmes

Characteristics of different resources—graphics, things, films, sound, people

Use of visual and performing arts

Understanding and selection of the right kind of resources for communication of a message

Techniques of presentation—programme and materials

Different formats of TV programmes

(iii) Management for the production of programmes

Proper planning and management of steps involved in the production process, outside and within the studio

Importance of studio discipline and relationship with other members of the production team

Role and responsibilities of different members of the production crew

Part II : (i) Planning and production of TV programmes

Planning and developing a production script; lay out of script

Planning and production of resources for the programmes

Dry rehearsals and their importance

Blocking of shots and camera rehearsal and their importance

Production of programmes in TV

(ii) Evaluation of TV programmes and collection of feedback data

Designing of tools for evaluation of programmes

Collection of data and evidence as feedback from Viewers

Interpretation of data and redesigning of programme, if necessary

5. ETV Presentation

Programme presentation is one of the most important aspects of a TV programme production. A well developed script and well planned TV programme production may not lead to a meaningful programme if it is not presented effectively. There are very few people with experience in the presentation of an educational TV programme.

Qualifications

The following points may be taken care of in the selection of trainees :

- (a) Background of subjects concerned besides having good general knowledge
- (b) Warm pleasing personality, possessing good sense of humour and an ability to establish a rapport with the viewers
- (c) Pleasing voice with adjustability to modulation of voice according to the needs of the scripts
- (d) Ability to present informally and dramatically with correct pronunciation, proper accent and stresses.

Duration

3 weeks

Course Design

In the first phase the trainees will be exposed to a condensed general orientation course of about three days. In the second phase the participants will acquire skills required in presentation of an ETV programme in terms of commentary, out-of-vision speech and the techniques involved in presentation of different resources. In the third phase they would be involved in practical work i.e. presentation of programmes in different formats which will be played back for purposes of discussion.

While the medium of instruction will be Hindi and English, the participants will be presenting programmes in their own regional languages.

General objectives

to develop a pool of trained persons for presenting ETV programmes effectively in different regional languages

Specific objectives

- to develop appreciation of the special requirements of presenting a ETV programme
- to bring about understanding of the dos and donts in ETV presentation
- to impart skills necessary for a presenter of an ETV programme

Course Content

Part I : Training in skills necessary for presentation of an ETV programme

Different styles and formats of TV programmes and their Resentation techniques

Techniques for presenting different resources on the screen

Speech training and modulation of voice

Mannerisms on the screen

Dress for the TV presenter—colour, design and texture

Part II : Practicals and evaluation

Presentation of programmes with different styles and formats

Playback of programmes for the purpose of discussion, analysis and evaluation

6. Utilisation of ETV Programmes

An ETV programme should be properly coordinated and used by the classroom teacher. It is, therefore, very important to organise training programmes for teachers using this medium on how to exploit ETV programmes to the maximum benefit of children. Also, they must be trained to operate a TV set and provided basic knowledge about its care and maintenance.

Trainees

All user teachers in primary and middle schools and all categories of educational administrative and field staff.

Duration

One week. The training will be organised in the beginning of the school session. If need the package can be repeated during the academic session.

Course Design

The training programme will be organised through television. Specially developed programmes will be received in each school having a TV set, around which all teachers in the school would assemble. Besides teachers, administrators and inspecting staff may also be expected to attend the programme partly to acquire orientation about the programme and partly to assist in clarifying points or doubts raised by teachers.

Each school having a TV set will thus become a training centre. All user teachers would simultaneously be trained without expense and inconvenience involved in pulling them out from their place of work and in organizing the training at different centre.

General objective

to develop competence in user teachers to operate and maintain a TV set

to develop understanding of the physical facilities needed for proper viewing

to create awareness of the importance of introduction to the programme and follow-up activities involving children

Course Content

There will be six programmes. The master programmes will be produced centrally and dubbed in the required languages. The six programmes will be made on the following aspects :

I Role of TV in Education

II Objectives of INSAT for education and development

III Physical facilities for TV viewing, operation and proper placement of TV set, seating arrangements, lighting conditions etc.

IV Using a TV programme most effectively

V Maintenance and minor repair of a TV set

VI Evaluation